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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,029	04/17/2006	Shigeo Kamamoto	4731-0132PUS1	8726

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EXAMINER

IRVIN, THOMAS W

ART UNIT	PAPER NUMBER
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3683

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/576,029	Applicant(s) KAMAMOTO ET AL.	
	Examiner THOMAS W. IRVIN	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060417, 20070216</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

Claims 1-4, 6, 10, and 12-14 are objected to because of the following informalities: in numerous locations, "plural pins" should be changed to -- plurality of pins --. Additionally, in claim 1 and 2, "used as" in lines 3 and 2, respectively, should be deleted. In claim 1 and 2, "while" in line 8 and 7, respectively, should be changed to -- and --. In claim 2, "determined on section" in line 8 should be changed to read -- determined on a section --. In claim 6, "used as" in line 1 should be deleted. In claim 8, "determined on section" in line 3 should be changed to read -- determined on a section - -. In claim 12 and 14, "points" should be changed to -- point --. In claim 13, "whereas" should be changed to -- and wherein --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-14, and 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 and 6, it is not understood what is meant by "mutually different rigidities against force acting in the longitudinal direction thereof."

In claims 3 and 12, the pins are claimed to have both, "the same sectional shape and sectional area," and "a mutually different sectional shape."

In claims 4, 13, and 14, both "a link having the greater pitch," and "a pin having the greater width" is indefinite because the claims do not recite what they are greater than.

Examiner notes that, to further examine these claims, they will be interpreted as best understood.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-9, 11, 12, 15, 16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Rooij et al. (5,728,021).

In Re claims 1, 2, and 11, '021 discloses a power transmission, including a power transmission chain (31) comprising: a plurality of links (33,53) each possessing through-holes (35,37), and a plurality of pins (45,47) inserted through the through-holes for interconnecting the plural links entrained between a first pulley possessing conical sheave (65) surfaces and a second pulley possessing conical sheave surfaces (67); and operating to transmit power by way of contact between opposite end faces of the pins and the sheave surfaces of the first and second pulleys (see Fig. 5), wherein the

plurality of pins substantially have the same length in the longitudinal direction (see Fig. 3), and the plurality of pins include plural types of pins (45,47) which have mutually different rigidities. A plurality of the plurality of pins have different sectional shapes (see Fig. 4). The examiner notes that rigidity is based on an area; therefore any one pin having a different surface area than another pin will inherently have a different rigidity.

In Re claims 3 and 12, as best understood, all of a first group of pins (45) of the plurality of pins have substantially the same sectional shape and sectional area, while a second group of pins (47) have a different sectional area.

In Re claim 5, 15, and 16 the sectional area of a first group of pins (45) appears to be between 1.1 and 2 times the sectional area of a second group of pins (47) (see Fig. 4).

In Re claim 6, '021 discloses a power transmission chain (31) entrained between a first and second pulley possessing conical sheave surfaces (see Fig. 5) and operating to transmit power by way of contact between opposite end faces of plural chain friction transmission members (45,47) and the sheave surfaces (65,67) of the first and second pulleys, the chain friction transmission members arranged along a chain longitudinal direction at predetermined space intervals, the chain comprising a plurality of links (33,53) each possessing first and second through-holes (35,37) arranged in the chain longitudinal direction, and a plurality of first pins (45) and a plurality of second pins (47), each of which penetrates the first through-hole of one link and the second through-hole of the other link thereby interconnecting the links, adjoining in a chain widthwise direction, in a manner to provide bending in the chain longitudinal direction, wherein the

first pin fixed in the first through-hole of the one link and movably fitted in the second through-hole of the other link and the second pin movably fitted in the first through-hole of the one link and fixed in the second through-hole of the other link are brought into relative movement in rolling contact thereby permitting the bending of the chain. It is the examiner's belief that, from the figures, the chain apparatus is similar to applicant's , and meets the limitations of wherein a locus of contact position between the first pin and the second pin is defined by an involute of a circle and the first pins and the second pins are combined to form two or more types of pairs which provide the involutes of base circles having different radii. The examiner notes that rigidity is based on an area; therefore any one pin having a different surface area than another pin will inherently have a different rigidity.

In Re claim 7, see Fig. 3.

In Re claim 8 and 18, the plural chain friction transmission members (45,47) include a first group of chain friction transmission members (45) which have mutually different sectional shapes or sectional areas than a second group of chain friction transmission members (47).

In Re claim 9, 19, and 20, see Fig. 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Rooij et al. (5,728,021) as applied to claims 1 and 2 above, and further in view of Zimmer (4,718,880).

In Re claims 4, 13, and 14, '021 further teach a first group of pins (45) which have a different width than a second group of pins (47) (see Fig. 4). '021 fail to teach links having different pitches.

'880 teaches, with reference to Fig. 9, arranging links (68a,70a,72a), with differing pitches, randomly in a chain (see col. 1 and 2, lines 60-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the chain of '021, to include links of differing pitch to lessen the noise of the chain against the sheaves, without affecting the tensional strength of the chain.

In Re claim 17, the sectional area of a first group of pins (45) appears to be between 1.1 and 2 times the sectional area of a second group of pins (47) (see Fig. 4 of '021).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Rooij et al. (5,728,021) as applied to claim 6 above, and further in view of Zimmer (4,718,880).

'021 further teach a first group of transmission pins (45) which have a different width than a second group of transmission pins (47) (see Fig. 4). '021 fail to teach links having different pitches.

'880 teaches, with reference to Fig. 9, arranging links (68a,70a,72a), with differing pitches, randomly in a chain (see col. 1 and 2, lines 60-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the chain of '021, to include links of differing pitch to lessen the noise of the chain against the sheaves, without affecting the tensional strength of the chain.

In Re claim 17, the sectional area of a first group of pins (45) appears to be between 1.1 and 2 times the sectional area of a second group of pins (47) (see Fig. 4 of '021).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS W. IRVIN whose telephone number is (571)270-3095. The examiner can normally be reached on Mon-Fri 8am-4pm, Alt Fri off (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas W. Irvin/
Examiner, Art Unit 3683

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art Unit 3683